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March 15th.

Vice-President WETHERILL in the Chair.

A letter was read from Mr. Jacob S. Miller, of Philadelphia, dated March 1, 1853, offering to present to the Academy the Gun of the late Alexander Wilson, the Ornithologist. Referred to the Curators.

Also a letter from Lieut. M. F. Maury, dated National Observatory, Washington, March 10, 1853, acknowledging the receipt of his notice of election as a Correspondent.

And a communication from the same, containing observations on Atmospheric Pressure, which was read and referred to a Committee consisting of Dr. Ruschenberger, Dr. Elwyn and Dr. Bridges.

A letter was read from Dr. H. Gibbons, dated San Francisco, Dec. 31, 1852, transmitting the specimens of fruit and leaves of Podocarpus, the donation of which was acknowledged at a previous meeting.

the donation of which was acknowledged at a previous meeting.

On motion of Mr Vaux, it was Resolved, That a Committee be appointed to ascertain at what price the Collection of Crania belonging to the Estate of the late Dr. Morton could be purchased for the Academy, and also whether that amount could be raised by subscription. Committee—Mr. Vaux, Dr. C. D. Meigs and Mr. John Cooke.

March 29th.

Vice-President BRIDGES in the Chair.

The Committee on Dr. Hoy's "Notes on the Ornithology of Wisconsin," reported in favor of publication in the Proceedings.

Notes on the Ornithology of Wisconsin.

By P. R. Hoy, M. D., of Racine, Wisconsin.

With few exceptions, the facts contained in the following brief Notes were obtained from personal observations made within 15 miles of Racine, Wisconsin, lat. N. 42° 42′; long. W. 88°. This city is situated on the western shore of Lake Michigan, at the extreme southern point of the heavy timbered district where the great prairies approach near the lake from the west, and is a remarkably favorable position for ornithological investigations. It would appear that this is a grand point, a kind of rendezvous, that birds make during their migrations. Here, within the last seven years, I have noticed 283 species of birds, about one-twentieth of all known to naturalists, many of which, considered rare in other sections, are found here in the greatest abundance. It will be seen that a striking peculiarity of the ornithological fauna of this section is, that southern birds go further north in summer, while northern species go further south in winter than they do east of the great lakes.

[* Indicates those known to nest within the State.]

VULTURINÆ, (1 species.)

*CATHARTES AURA, Linn.

Found occasionally as far north as Lake Winnebago, lat. 44°. More numerous near the Mississippi River.

FALCONIDÆ, (19 species.)

*Aquila chrysætos, Linn.

I have a fine specimen, shot near Racine, Dec. 1853.

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It is a fact worthy of note that this noble eagle, in the absence of rocky cliffs for its eyrie, does occasionally nest on trees. One instance occurred between Racine and Milwaukee, in 1851. The nest was fixed in the triple forks of a large oak.

HALLETUS WASHINGTONIS, And.

I procured, in 1850, a living bird that had been slightly wounded, which answered to Audubon's description of this doubtful species. I kept it in an ample cage upwards of two years, but before its death it underwent changes in plumage which led me to believe that, had it lived, it would have proved to be the white-headed species. I put several species of hawks and owls into the same apartment, several of which the eagle killed and devoured without ceremony. When a fowl was introduced, he pounced upon it, and without attempting to kill, proceeded to pluck it with the greatest unconcern, notwithstanding its piteous screams and struggles.

It is my opinion that the Bird of Washington will prove to be only an unusually marked large and fine immature white-headed eagle. My specimen, a female, measured 7½ ft. in alar extent.

*HALLETUS LEUCOCEPHARUS, Linn.

Numerous throughout the State. I have seen one of these fine birds pounce upon and capture a fish in the lake. The eagle did not disappear wholly under the water, which led me to suspect that the fish was in some way disabled.

*Pandion Halletus, Linn.

Not uncommon.

*FALCO PEREGEINUS, Gmel-

This noble falcon is frequently met with, although not so numerous as many other hawks. A pair nested for several years within ten miles of this city; constructing their nest on the top of a large red beech-tree.

I have seen one of these daring hawks make a swoop into a flock of blue-winged teal, killing two on the spot.

*FALCO COLUMBABIUS, Linn.

This active little falcon is numerous, especially in spring and fall, during the migration of the smaller birds. A few nest with us, many more in the pine forests of the northern part of the State. Those that nest in this vicinity regularly morning and evening visit the lake shore, in quest of bank swallows, which they seize with great dexterity while on the wing.

FALCO ERALON, Grael.

I have met with three individuals of this small species, Nov. 15th, 1849, Dec. 25th, 1850, and Dec. 12th, 1852.

*FALCO SPARVERIUS, Linn.

Common.

*Astur atricapillus, Wilson.

This daring and powerful hawk is to be found at all seasons; the old birds only remain during winter, the young retiring further south. The young are so different in their plumage from the old birds, that few would suspect their identity; they are more bold and daring, much more destructive to the poultry yards than the more sly and cantious old ones—a peculiarity not, however, confined to this species.

*ASTUR COOPERII, Bonap.

Not uncommon. They destroy many quaits and young grouse, which, together with poultry, constitute their principal fare. They construct their nests on the top of large trees, in the most secluded situations, and leave us at the approach of winter.

*Astur fuscus, Gmel.

Common. Nest here about the middle of April.

ICTINEA PLUMBEA, Gmel.

I saw a single specimen of this southern kite on Rock River in this State, in July, 1846. It is occasionally met with on the Mississ ppi River.

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*Nauclerus furcatus, Linn.

This kite was numerous within ten miles of Racine, where they nested up to the year 1848, since which time they have abandoned this region. I have not seen one since 1850. They nested on tall elm trees about the 10th of June, and left us about the 1st of September.

*Buteo lagopus, Wilson.

Not numerous. I have repeatedly seen this buzzard soar to great heights, notwithstanding the testimony of some ornithologists to the contrary. They are in the habit, while in pursuit of mice, frogs, &c., of balancing themselves over marshy situations on the prairies. If not successful, they sail off to other more suitable grounds, and renew the same motion. When they espy the quarry, they dart directly upon it in the manner of the true falcon. Where there are trees, they may adopt a different mode of hunting. My observations apply to the prairies.

*Buteo Borealis, Gmel.

Common. They do not remain with us during severe winters. I have a fine albino specimen of this species. Although pure white, the irides were yellow. This individual was known to inhabit a particular district in Huron Co., Ohio, for ten years. Although I had offered a liberal reward for the capture of the "white hawk," it was several years before I succeeded in getting him.

BUTEO VULGARIS, Willoughby.

Not numerous. One of our winter residents.

*Buteo Pennsylvanicus, Wilson.

Common.

*Buteo lineatus, Gmel.

This noisy species is extremely numerous. The great number of hawks, of this and other species, that are often seen soaring in company during fine weather, about the 20th of September, at which time they are migrating south, is almost incredible.

*CIRCUS CYANEUS, Linn.

Common. They build their nests entirely of grasses (carex,) placed on the ground in the middle of swampy marshes. Nest about the 1st of June.

STRIGINÆ, (14 species.)

SURNIA FUNEREA, Gmel.

A few visit us every winter.

SURNIA NYCTEA, Linn.
Numerous on the prairies from November to March.

*Scors asio, Linn.

Common. In the month of June I caught four young ones just as they were about leaving the nest. They were a deep reddish brown, in all respects similar to the old female which I shot at the time, and have preserved.

*Scops NÆVIA, Gmel.

Common. I am not yet satisfied that the mottled and red owls are specifically the same.

*Bubo virginianus, Gmel.

One of our most numerous species. I once put a remarkably large and fine owl of this species into the same cage with the "Washington Eagle," previously mentioned, which soon resulted in a contest. The moment a bird was given to the owl, the eagle demanded it in his usual peremptory manner, which was promptly resisted with so much spirit and determination that for a time I was in doubt as to the result; but finally the eagle had to stand aside, and witness the owl devour the coveted morsel. After several similar contests, it was mutually settled that possession gave an undisputed right, the owl not being

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disposed to act on the offensive. I had a fine red-shouldered hawk in the same aviary, which the owl killed and ate the second night.

Bubo subarcticus, Hoy.

This winter vistor I consider closely allied, yet distinct from the common horned owl, and as such it is described in the Proc. Acad. Nat. Sci. vol. vi. page 211. I have as yet examined but three specimens. The specimen in the collection of the Academy was known to carry off from one farm, in the space of a month, not less than twenty seven individuals of various kinds of poultry, before it was shot.

SYRNIUM CINEREUM, Linn.

Not numerous. I have a fine male specimen, shot near Racine, Jan. 4, 1848-A remarkable peculiarity of this specimen was, that the irides were brilliant blood-red. I saw one sieze and carry off a duck on Lake Superior, near the mouth of Cerf river, Sept. 1st, 1845.

*Syrnium nebulosum, Linn.

Common in the heavy timbered districts.

*Otus vulgaris, Aud.

More numerous in the vicinity than any other owl. The young leave the nest about the middle of June.

*Otus brachyotus, Linn.

Common on the prairies, where they nest on the ground, in the tall grass. The young are fully fledged by the second week in June.

*NYCTALE ACADICA, Gmel. Common.

NYCTALE TENGMALMI, Gmel.

I procured a single specimen near Racine, Nov. 30th, 1850. Not uncommon on the head waters of the Wisconsin river.

NYCTALE KIRTLANDII, Hoy.

A third species of this genus, found here, and described in the Proc. Acad. Nat. Sci. vol. vi. page 210.

Only two specimens have yet been observed.

STRIX FLAMMEA, Linn.

A fine specimen of this handsome owl was obtained this spring by my friend the Rev. A. C. Barry, of this city. It was shot near this city, and is the only specimen which has come under my observation.

CAPRIMULGIDÆ, (2 species.)

*Antrostomus vociferus, Wilson.

Common. Arrives about the 1st of May, departs middle of September.

*CHORDEILES VIRGINIANUS, Briss.

Numerous. They leave us by the 15th of September. On the 10th of this month, 1850, for two hours before dark, these birds formed one continuous flock, moving south. They reminded me, by their vast numbers, of passenger pigeons, more than night hawks. Next day not one was to be seen.

HIRUNDINIDÆ, (6 species.)

*Progne purpurea, Linn. Common.

*HIRUNDO AMERICANA, Wilson. Numerous.

*HIRUNDO FULVA, Vieill.

A few nested for the first time at Racine in 1852. Numerous in many parts of the State.

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*HIRUNDO BICOLOR, Vieill.

Not a numerous species with us. Arrives from the 1st to the middle of April.

*Cotyle riparia, Linn.

This numerous species perforates the banks of the lake, wherever the soil is sandy.

*CHÆTURA PELASGIA, Temm.

Common.

HALCYONIDÆ, (1 species.)

*CERYLE ALCYON, Linn. Common.

LANIADÆ, (3 species.)

*LANIUS BOREALIS, Vieill.

This large shrike is most numerous during fall and winter. A few, however, spend the summer in the middle and northern parts of this State. During winter they subsist on field mice (arvicola,) and small birds.

*Lanius Ludovicianus, Linn.?

I much doubt whether the north-western and southern loggerhead are the same. Our bird is smaller than the southern, as described in the ornithological works, the adult male measuring 8\} to 12\}; female 8\} to 10\}. The nest and eggs, too. differ materially from Bachman's description, as quoted by Nuttall, of those of the southern species. The Wisconsin bird constructs a compact nest, placed on the lower branches of a small tree. It is composed externally of small sticks and roots, filled in with strips of bark and the lint of various species of plants, and is amply lined with feathers, which almost conceal the six spotted eggs.

The male assists in incubation, which is completed in fourteen days.

I once shot a female just as the pair had commenced building. The male went on and completed the nest, even to the soft lining of feathers, then took his stand on the topmost branch of the same tree, and continued watching almost constantly for three days, apparently awaiting the return of his mate. At the end of that time I missed him, and supposed he had abandoned the spot; but the second day afterwards, he returned with a new bride, who appeared well satisfied with the waiting nest, and commenced laying immediately.

They return to a particular tree to nest every year. This attachment is so great, that when the nest is destroyed, even after they commence incubation, they not unfrequently construct another on the same tree. Mice, young birds and large insects compose their fare.

Numerous on the border of the prairies. Arrive 1st of April; depart in October.

LANIUS EXCUBITOROIDES, Swains.

I shot a pair of birds of this species in March last (1853.) The female is faintly marked on the breast with pale brown undulating lines. This is undoubtedly a distinct species.

MUSCICAPIDÆ, (14 species.)

*Tyrannus intrepidus, Vieill.

Common.

*TYRANNUS CRINITUS, Linn.

Not so common as the preceding. Inhabits the dark swampy woods, where the harsh squeak of this species is frequently heard.

*Tyrannula fusca, Gmel.

This familiar pewee is met with everywhere.

*Tyrannula virens, Linn.

Common in the deep solitary woods.

TYRANNULA PHŒBE, Lath.

I shot two individuals of this species May 10th, 1848. Probably not very rare, but impossible to distinguish it from the T. fusca without carefully comparing the two.

*TYRANNULA ACADICA, Gmel.

The most numerous of the fly-catchers in Wisconsin,

TYRANNULA PUSILLA, Swains.

This species, so closely allied to the preceding, is not unfrequently met with about the 10th of May, on its passage north.

Tyrannus Cooperii, Nutt.

I have occasionally met with this bird during the latter part of May.

*Setophaga ruticilla, Linn.

Numerous. Arrive 5th of May; commence constructing their nests 1st of

*Sеторнада мітката, Вопар.

Not numerous near Racine, which may be considered the northern limit of this bird's summer migration.

*Setophaga canadensis, Linn.

This interesting species is not uncommon with us.

SETOPHAGA WILSONII, Bonap.

Common from the 10th to the 25th of May.

SETOPHAGA MINUTA, Wilson.
Rarely met with. The only specimens I have were shot 1st of June, 1850.

*Culicivora cerulka, Linn.

Not uncommon. Arrives first of May.

VIREONINÆ, (6 species.)

*Vireo Flavifrons, Vieill.
Not uncommon. First appearance from 10th to 15th of May.

*VIREO SOLITARIUS, Vieill.

This is by no means a rare bird in Wisconsin; it frequents the most secluded thickets. Arrives about 15th of May.

*VIREO NOVEBORACENSIS, Gmel.

I have noticed but few specimens of this species. Not common.

*VIREO GILVUS, Vieill.

This cheerful songster is rather scarce with us, perhaps the least numerous of the Vireos.

*VIREO OLIVACEUS, Linn.

By far the most abundant of the hirds of this genus; its sprightly and melodious song is heard almost constantly during the summer.

*PETERIA VIRIDIS, Gmel.

A few only are to be found in the tangled thickets during the summer months.

MERULIDÆ, (10 species.)

MIMUS POLYGLOTTUS, Lath.

Occasionally a straggler of this charming songster finds its way as far north as Wisconsin. I saw one between Racine and Kenosha July 16th, 1851, and a second near the State line on Rock river, July 26th, 1846.

*MIMUS RUFUS, Linn. Very abundant.

*MIMUS FELIVOX, Bonap.

Common.

*Turdes migratorius, Linn.

Abundant. Arrives middle of March, leaves first of November.

*Turdus mustelinus, Gmel.

Common. Wishing to add to my collection a pair of this species, together with their nest and eggs, I shot the female, and was about to secure the nest, when the male, which had been watching me in the vicinity, commenced singing; and as I approached the spot he glided off still further from the nest, all the time pouring fourth the most mellow and plaintive strains I ever before heard uttered by this most melodious of songsters. After I had been entired to a considerable distance, he returned to the vicinity of the nest; three or four times I followed this bird in the same manner before I succeeded in shooting him. This movement, and the effect of his tender song, so far enlisted my sympathies that I regretted exceedingly my cruelty in destroying his nest and mate. It is common for birds to resort to various stratagems for the purpose of attracting intruders from their nests, but this is the only instance with which I am acquainted where the charms of their music were employed for this object.

TURDUS SOLITARIUS, Wilson. (?)

Numerous during spring and fall.

Is our bird, which retires further north to breed, the same that nests in the Southern States?

*Turdus wilsonii, Bonap.

Common. Nests 1st of June.

*Seiurus noveboracensis, Gmel.

Abundant in spring and fall. A few nest in dark and gloomy swamps. Their song is sweet, a mixture between the Warbler's merry ditty and the more mellow strains of the Thrush.

*Seiurus aurocapillus, Wilson. Common.

Anthus Ludovicianus, Lichst.

Abundant on the prairies in spring and fall.

SYLVIADÆ, (35 species.)

SYLVICOLA CORONATA, Wilson.

Numerous. The first warbler that arrives in the spring—1st of April; they all go north by the third of May; in the fall they linger with us until November.

SYLVICOLA PETECHIA, Lath.

Very numerous, especially in the fall, when thousands may be seen any day on the prairies,—running along the fences,—flitting from stalk to stalk in the corn-field,—all the time wagging their tails in the manner of the Titlark and Aquatic-Thrush, which they closely resemble in habits.

*Sylvicola Æstiva, Gmel.

Abundant.

SYLVICOLA MACULOSA, Lath.

Numerous from the 5th to 27th of May.

SYLVICOLA FLAVICOLLIS, Wilson.

I shot a single individual of this species near Racine, June 20th, 1848.

*Sylvicola virens, Lath.

Common. A few nest with us. The old males arrive 5th of May, young males and females about the 10th of the same month.

*Sylvicola Blackburnix, Lath.

One of the most numerous warblers from the 5th to the 20th of May. The old males precede the females about a week. The first arrivals of this species, as well as all others, are in the finest plumage. A few nest with us.

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*SYLVICOLA ICTEROCEPHALA, Lath.

This beautiful little warbler is extremely abundant. It prefers localities with a dense under-brush, especially hazel, thinly covered with trees. In such situations it is not uncommon to hear the songs of a dozen males at the same time. They construct a nest of blades of grass and thin strips of bark intermingled with caterpillars' web, fixed in a low bush, (generally hazel,) seldom more than two or three feet from the ground; the eggs, 4 or 5 in number, closely resemble those of the S. astiva. But one brood is raised in a season—nest from the 10th to 15th of June. If the nest be approached when the female is in it, she will drop to the ground and hobble along with one wing dragging, uttering at the same time a peeping note of distress.

I once caught a young bird of this species that had just left the nest; the parent birds, in their alarm for its safety, approached so near to me that I caught the male in my hand. I let them both go, upon which, the joy of the old bird appeared to be greater for the escape of the young fledgling than for his own

release.

SYLVICOLA CASTANEA, Wilson.

Arrives in large numbers about the 10th of May; all gone north by the 25th.

SYLVICOLA STRIATA, Lath.

Equally numerous with the preceding; the two species arrive and depart in company.

*Sylvicola pinus, Lath.

Not a numerous species with us. Nest in the northern pine forests.

SYLVICOLA DISCOLOR, Visill.

A few are occasionally seen about the middle of May. Rare in Wisconsin.

*Sylvicola Americana, Lath.

Common. The beautiful pensile nest of this bird has never, to my knowledge, been described. Audubon undoubtedly erred in attributing the nest described by him to this species. That presented by me to the Collection of the Academy is formed by interlacing and sewing together, with a few blades of grass, the pendant lichen (Usnea barbata) which grew upon a dead horizontal branch of an oak, fifty or sixty feet from the ground. A hole, just large enough for the bird to enter, is left in the angle immediately under the branch, which forms a complete roof for the nest; it is finished with a slight lining of hair. The whole forms a beautiful basket of moss, which is so admirably adapted to the purpose intended, so effectually concealed, so light and airy, that it would be almost impossible to suggest an improvement, and is certainly one of the most interesting specimens of ornithological architecture. The eggs, four or five in number, are white, with a band of light brown spots near the greater end; they measure 5 by 71 lines in diameter. The young leave the nest about the first week in July.

Sylvicola canadensis, Linn.

Abundant from the 5th to 25th of May, and again from the 1st to 20th of October.

Sylvicola formosa, Bonap.
Rare. Shot one near Racine, May 10, 1851.

*Sylvicola corulea, Wilson.

Not common. A few nest with us.

SYLVICOLA MARITIMA, Wilson.

By no means a rare bird during the month of May. It frequents the vicinity of streams and swamps that abound with tall willows, in the tops of which this interesting warbler is commonly seen flitting about, busily searching for insects and their larvæ. It is probable that a few nest in this vicinity.

*TRICHAS MARYLANDICA, Wilson. Common.

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TRICHAS AGILIS, Wilson.

Not uncommon. I shot a pair on the 29th of May; they had mated, and were about to nest.

TRICHAS PHILADELPHIA, Wilson.

Rarely seen. Shot one May 10, 1851.

VERMIVORA PENNSYLVANICA, Swain. A few nest in this section. Rare.

VERMIVORA CHRYSOPTERA, Linn.

Not uncommon for a few days in May. Go north.

VERMIVORA RUBRICAPILLA, Wilson.

Common for two weeks in May on their passage north: they return in October, at which time the male is without the chestnut crown.

*VERMIVORA CELATA, Say.

Not an uncommon species. Frequent the most secluded swamps, where they nest.

VERMIVORA PEREGRINA, Wilson.

Some seasons, about the middle of May, this plain bird is met with in great abundance. This was particularly the case May 14, 15 and 16, 1849, when I could have procured any desired number; they literally thronged on the tops of the bush oaks in an adjoining grove. For the last two years I have not procured a single specimen.

*MNIOTILTA VARIA, Vieill.

Common.

MNIOTILTA BOREALIS, Nutt.?

I have met with specimens that answered to Nuttall's description, yet I am inclined to consider it a variety of the preceding.

In order to give some idea of the abundance and great variety of the warblers which visit us, I append a list shot in the forenoon of May 5th, 1852, by Rev. A. C. Barry and myself:

6 S	ylvico	la americana,	1 Sylvicola æstiva,
1	"	pinus,	4 " canadensis,
1	"	striata,	1 " petechia,
5	66	icterocephala,	4 " maritima,
4	"	virens,	1 Setophagia canadensis,
6	"	Blackburnia,	2 Vermivora rubricapilla,
5	66	maculosa,	2 Trichas marylandica,
1	66	coronata,	3 Mniotilta varia,
		•	
			47.

All, except three, males in unusually fine plumage, the females not having vet

We could have obtained many more of most of the species, had it been desirable.

*TROGLODYTES ÆDON, Vieill.

Common. First appearance 15th of April.

*TROGLODYTES HYEMALIS, Vieill.

Common. Nest in abundance on the shores of Lake Superior.

*TROGLODYTES BREVIROSTRIS, Nutt.

A few nest in the vicinity of Racine. Not abundant.

*TROGLODYTES PALUSTRIS, Wilson.

Abundant on all our reedy flats.

TROGLODYTES LUDOVICIANUS, Bonap.

I met a single wren of this species, July 5th, 1852. Undoubtedly nests sparingly in the southern part of the State. Rare.

REGULUS CALENDULA, Linn. Abundant spring and fall.

REGULUS SATRAPA, Lichst.

Abundant. Arrives 1st of April, and remains until May 10th.

SIALIA WILSONII, Swains.

The first arrival of this harbinger of spring at Racine, was-

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. March 25th.
In 1846,
" 1847,
                      "
                           20th.
" 1848,
                      "
                           17th.
" 1849,
                      "
                           11th.
" 1850,
                      ••
                           21st.
" 1851,
                      "
                           15th.
" 1852,
                           12th.
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(To be continued.)

The Committee on Dr. Heermann's "Catalogue of the Oological Collection in the Academy of Natural Sciences of Philadelphia," reported in favor of publication in the Proceedings. (FF See end of this number.)

The Committee on Lieut. Maury's communication, containing his observations on atmospheric pressure, reported as follows:

Lieut. M. F. Maury, through Dr. Le Conte, the Corresponding Secretary, presented an engraved diagram, representing a "vertical section of the basin of the Atlantic," about the parallels of 39° and 40° north latitude, the data for which drawing are furnished by the deep sea soundings, taken by officers of the U. S. Navy, in obedience to an order from the Navy Department. Lieut. Maury says, "These data are not very abundant, but such as they are they give a proximate idea as to the submarine depression."

The diagram exhibits a striking contrast between the profile of the Earth's crust above and below the sea level.

The same plate represents a vertical section across the continent of South America from Lima, on the Pacific, to the mouth of the Amazon under the equator, on the Atlantic.

The object of this part of the engraving is to illustrate certain anomalies in the pressure of the atmosphere, as inferred from the experiments of Lieut. Herndon, U. S. Navy, on the boiling point of water, during his recent journey across that section of the continent. The following extract from a table shows the boiling points at several places on the route, and their elevations above the sea respectively:

Heights of Places determined by Lieut. Herndon, U.S. N.

Names of Places.	Distance in Statute Miles from Lima.	Boiling Point.	Heights above the level of the sea.
Brought forward	352 20	206-5	2595 feet.
La Cueva Lingo Maria	10	207.8	1923 "
Land Travel	382		
Focache	174	209.1	1253 "
Sion	. 58	209-7	944 "
Lupuna	. 58	210.	791 "
Chasuta	. 87	210.5	585 "
Santa Cruz	220	211.2	177 "
Vanta	353	211.3	126 "
Petras	197	211.1	228 "
Egas (904)	707	208-2	1715 "
River Bank	131	208.4	1611 "
"	60	208-5	1560 "
"	. 168	208.6	1507 "
"	. 50	208.8	1406 "
Barra	. 14	209.3	1150 "
Mouth of the Maderia .	104	209.8	893 "
Villa Nova	209	210.3	638 "
Santarem	220	210.5	535 "
Pará · · · ·	759	211.5	25 "
Sea	. 93		
Direct water travel	3652		

A dotted line on the diagram represents Lieut. Herndon's track above the level of the sea, according to the above experiments. "By this track it will be perceived," says Lieut. Maury, "that after ascending the Andes, and coming down the Amazon to a considerable distance, he ascended or went up hill. Now we know that this was not the case, because he was all the time drifting down the stream in a canoe. To reconcile this apparent paradox between the inclination of this slope of the continent, as shown on the one hand by the running water of the rivers, and on the other by the pressure of the air, it is necessary to suppose, that when he boiled his water at the eastern base of the Andes, he was in fact under a bank of atmosphere, and that the pressure under this bank was so great as to force the boiling point up very nearly to the sea level.

was so great as to force the boiling point up very nearly to the sea level.

"Let us now proceed to account as best we may, for this bank, or increased atmospheric pressure.

"These experiments were made in south latitude, and in the trade wind region of that hemisphere. These winds strike nearly perpendicularly against the Andes, the tops of which range extend in many places nearly, if not quite as high, as do the trade winds themselves. Now, then, what is the effect of such an obstruction as the Andes afford to the passage of the south east trade winds? If we may judge by the effect of similar obstructions to running water, we have no hesitation in saying that the effect is to bank up.

"Pot Rock and other obstructions to the rapid current of Hurlgate—taking small things to represent great—may serve us with an illustration that will assist me in making myself clear. Any one who witnessed the water running over that rock, could not fail to be struck with the fact, and the extent to which the water was piled up, not over the rock, but up stream from it; not only was

there this banking up of the water before it reached the rock, but there was also a depression above—that is, up stream from this bank of water on the one hand, and below or down stream from the rock on the other.

"In like manner it appears to me, that Herndon's observations have revealed the fact that there is, at times at least, in the intertropical atmosphere of South

America, an air-cast mould of the Andes.

"It is remarkable how clearly these observations indicate a piling up of the atmosphere to the windward of the Andes, and a depression in the general atmospherical level to the windward again of this air bank. If this conjecture afford the real explanation of the phenomena, we should look on the lea side of the Andes for a low barometer, or a depression in the atmosphere, corresponding to the hollow in the water below Pot Rock.

"The mean height of the Bar in Lima, as far as I have been able to ascertain

it, indicates that such a depression is felt there.

"If subsequent observations should confirm these indications and establish them as realities, we should then be put in possession of important physical facts. We should be led to infer that the height of mountains, and of mountain slopes above the sea level, as determined by the barometer, would depend somewhat upon which way the wind blows, and the only safe rule of admeasurement in such cases, would be to establish a standard barometer at the foot of the mountains, both in the windward and the lea side.

"Another of the physical facts besides that of establishing the direction of the wind, as a function in barometric determination is, that if this increased pressure of the atmosphere at the eastern foot of the Andes be caused by the obstruction which that range of mountains affords to the passage of the trade winds, then do those mountains in the trade wind region become a natural anamometer, which will give us in terms of the barometer an expression for the whole amount of force employed in giving motion and velocity to the trade winds of the earth."

ELECTION.

J. Dickinson Logan, M. D., and Mr. Frederick Schafhirt, of Philadelphia, and Mr. P. W. Sheafer, of Pottsville, were elected *Members* of the Academy, and

Dr. H. Schaum, of Berlin, Dr. G. Hartlaub, of Bremen, and Prof. A.

Wagner, of Munich, were elected Correspondents.

April 12th.

Vice-President BRIDGES in the Chair.

A communication was read from the Historical Society of Pennsylvania, dated March 17th, 1853, acknowledging the receipt of the last number of the Journal, and of a collection of Indian antiquities presented by the Academy.

Mr Conrad presented a paper for publication in the Journal, describing new species of Unio; which was referred to Dr. Ruschenberger,

Dr Wilson and Dr. Zantzinger.

A second paper from Mr. Conrad was also presented, intended for publication in the Proceedings, entitled, "Monograph of the genus Fulgur." Referred to same Committee.